

Comparison of anxiety and patient satisfaction before and after elective hysterectomy under general or spinal anesthesia: A questionnaire study

Comparison of anxiety and patient satisfaction

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Abstract

Aim: One of the most important purposes of preoperative assessment is to reduce anxiety. Anxiety has a negative effect on anesthesia, operation and post-operative healing. It was aimed to this study find out the causes of anxiety related to anesthesia, measure preoperative anxiety levels, and determine the relationship between anxiety and patient satisfaction in elective hysterectomy procedures.

Material and Methods: After obtaining informed consent, 101 volunteer patients aged 18-65 years who were going to undergo elective hysterectomy surgery were included in the study. Patients were asked demographic variables, the first three causes of anxiety related to anesthesia, to respond to State-Trait Anxiety Inventory [STAI] I and II tests and complete QoR-40 test.

Results: While preoperative STAI I values were higher than STAI II, postoperative STAI I values were found to be decreased. It was seen that the patients' anxiety level was too high during the preoperative period. It was found that the causes of preoperative anxiety related to anesthesia were oversleeping after surgery, post-operative pain, nausea and vomiting. No relationship between preoperative anxiety and postoperative patient satisfaction was found.

Discussion: In this study, it was observed that being older, having given birth before, being single, and increased anxiety in patients who underwent spinal anesthesia. In addition, it was found that there was no significant change in anxiety level according to education level, number of children, occupation, and history of surgery.

Keywords

Anxiety, Hysterectomy, Patient Satisfaction, Anesthesia

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Introduction

Preoperative evaluation includes taking the patient’s history, laboratory investigations, and anesthesia risk assessment. It aims to inform the patient about the upcoming procedure and relieve anxiety with pharmacological and non-pharmacological methods [1].

Anxiety that changes both psychological and physiological status, has a negative effect on operation, anesthesia and postoperative recovery. Listening to the patient’s anxieties strengthens the ability to cope with anxiety. There are too many aims of preoperative preparation. One of the most important is to reduce anxiety [2,3].

In this study, it was aimed to find out the causes of anxiety related to the anesthesia, measure pre- and post-operative anxiety levels and to determine the relationship between anxiety and patient satisfaction in elective hysterectomy procedures.

Material and Methods

After obtaining ethical approval and informed consent [2010/56-21.10.2010] 101 voluntary patients who were to undergo elective hysterectomy operation, aged 18 to 65 years were included and randomized in the study regardless of the educational status.

Pre-anesthetic examinations of all patients were performed before the operation, and patients who met the criteria were given verbal information about the study and their written and verbal informed consent was obtained. The questionnaire forms were filled out by literate patients on their own, while the the forms were read to illiterate patients by the researcher one by one in an understandable way, given a sufficient period of time and marked according to the patient’s response. Patients who had psychological disorders and any medical problem that might have limited evaluation were excluded from the study.

Patients were visited pre and postoperatively. Age, educational status, marital status, number of children, occupational status, history of surgery, type of anesthesia and demographic information about comorbidities took part in the first chapter. Twelve questions were given that included concerns about anesthesia and it was asked to record the first common 3 causes of anxiety related to anesthesia in the second chapter. Patients were asked to respond to the STAI I and STAI II tests, which measured state and trait anxiety in the third chapter. They were asked to fill QoR-40 test consisting of 40 questions, which measured the quality of postoperative recovery in the fourth chapter.

Patients were asked to fill out the demographic data form, consisting of anxiety causes and STAI I and II in the preoperative period and QoR-40 ve STAI I in the postoperative period.

STAI measured state and trait anxiety levels. Higher and lower scores indicated greater and lower scores of anxiety, respectively. Patient’s anxiety was considered by the values from State- Trait Anxiety Inventory as 0-19 no anxiety, 20-39 low anxiety, 40-59 moderate anxiety, 60-79 high anxiety, 80 and above panic and very high anxiety.

QoR-40 [Quality of Recovery Score- 40]

A 5-point Likert-type scale was to measure the quality of postoperative recovery. Minimum of 40, maximum of 200 scores could be given. No special education was needed to

apply the questionnaire. An important advantage was that the questionnaire could be completed quickly and by the patients themselves.

Statistical Analysis

All statistical analysis in our study were done with SPSS for Windows 11.0 Turkish package software. Anova analysis method was used in pre and postoperative STAI evaluation and T test, which is a descriptive statistical method, was used in the analysis of the causes of anxiety.

Ethical Approval

Ethics Committee approval for the study was obtained.

Results

The overall preoperative and postoperative evaluations of the 101 patients who were included in the study are shown in Table 1. Patients’ ages differ from 35 to 65, with a mean age of 49,71±8,86.

STAI-I values in the preoperative period were between 19-76; STAI-II values were between 20-80. Preoperative mean STAI-I values were 43,50±13,53, mean values of STAI-II in the same period were 40,30±9,65. STAI-I values in the postoperative period were between 20 and 52. Postoperative mean STAI-I values were 28,07±6,25 (Figure 1).

Preoperative and postoperative state-trait anxiety inventory [STAI-I] scores and the comparisons according to the general evaluation of the patients who were included in the study are summarized in Table 2.

STAI-I values decreased significantly in both groups under the age of 50 and 50 years old and older in the postoperative period to 27,75 and 28,48 respectively [p<0,05] (Table 2). The patients were divided into 2 groups according to the type of anesthesia: general and regional (spinal). The preoperative and postoperative mean STAI-I scores of 58 patients operated under general anesthesia were 40,28 and 26,31 respectively; the preoperative and postoperative mean STAI-I scores of 43 patients operated under spinal anesthesia were 47,86 and 30,44 respectively and this decrease was found to be significant (Table 2).

According to the marital status, the preoperative mean STAI-I score of 88 married patients included in the study was 42.78, decreasing to 28.19 in the postoperative period (Table 2). The preoperative mean STAI-I score of 13 single and widow patients in the study was calculated as 48.38, and the postoperative mean STAI-I score was 27.23. The decrease in STAI scores was significant in both groups [p<0,05] (Table 2).

According to the history of the operation, the patients were evaluated in 2 groups. The preoperative and postoperative mean STAI-I score of patients without any history of operation was 43,82 decreasing to 28,61 in the postoperative period (Table 2). The preoperative mean STAI-I score of patients with a history of operation was 43,18, which decreased to 27,52 in the postoperative period (Table 2). When comparing between the preoperative and postoperative periods of anxiety, this decrease in anxiety seems to be significant, which means high anxiety in the preoperative period [p<0,05] (Table 2).

The most common causes of preoperative anxiety in patients were the inability to wake up after surgery [51.5%], ‘Postoperative pain’ [31.7%], ‘nausea-vomiting’ [23.8%],

Staying in Intensive Care Unit [14.9%] and awakening during surgery [9.9%] (Figure 2).

Patient satisfaction scores are shown in Table 3. According to the Patient Satisfaction Scale, which includes values ranging from 40 to 200, patients' satisfaction scores range between 166,07 and 173,74. While the least satisfaction was observed in the Spinal anesthesia group [166,07] and the highest satisfaction was observed in the ASA I group [173,74]. The single/widow group appears to be the group with the most anxiety with the highest mean STAI-I value, but ranks third in the mean satisfaction score. In contrast to these findings, while the preoperative mean STAI-I score in the spinal anesthesia group was the second highest, the mean satisfaction score in the same group was the lowest.

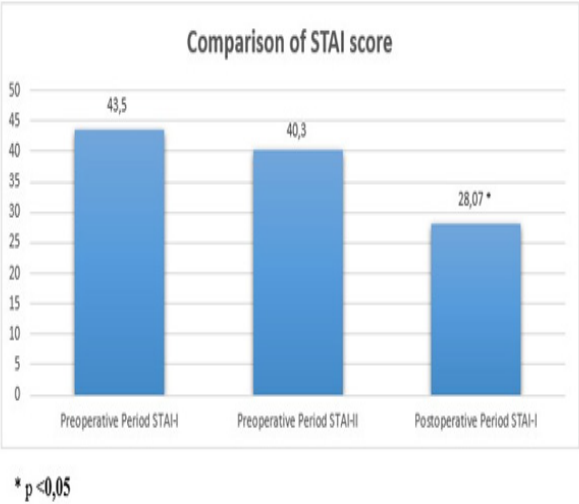


Figure 1. Comparison of STAI scores in the pre-and post-operative periods.

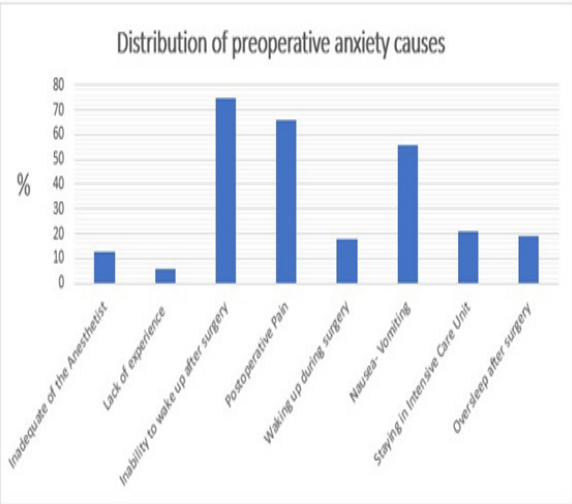


Figure 2. Distribution of preoperative anxiety causes.

Table 1. Demographic Characteristics of the Participants.

	n	%
Age (years)		
≤50	57	56.4
≥ 51	44	43.6
Type of Anesthesia		
General Anesthesia	58	57.4
Spinal Anesthesia	43	42.6
Marital Status		
Married	88	87.1
Single/Widower	13	12.9
Educational Status		
Illiterate	23	22.8
Primary school	64	63.4
High school and higher	14	13.9
Number of Children		
No Children	9	8.9
1 to 3 children	60	59.4
4 and more children	32	31.7
History of Operation		
No history	51	50.5
With history	50	49.5

Table 2. Comparison of mean STAI-I values according to demographic characteristics of patients.

	n	Pre-op STAI-I values	Post-op STAI-I values	p
Age (years)				
≤50	57	45,93±13,63	27,75±5,079	0,035*
≥ 51	44	40,36±12,870	28,48±7,553	
Type of Anesthesia				
General Anesthesia	58	40,28±13,83	26,31±5,91	0,042*
Spinal Anesthesia	43	47,86±11,93	30,44±5,96	
Marital Status				
Married	88	42,78±13,506	28,19±6,39	0,027*
Single/Widower	13	48,38±16,12	27,23±5,310	
Educational Status				
Illiterate	23	41,13±12,56	27,04±5,13	0,085
Primary school	64	44,72±13,96	28,64±6,73	
High school and higher	14	41,86±13,23	27,14±5,65	
Number Of Children				
Without Children	9	44,67±12,81	25,78±4,43	0,095
1 to 3 children	60	44,05±14,40	28,05±6,46	
4 and more children	32	42,16±12,26	28,75±6,27	
History of Operation				
Without history	51	43,82±13,21	25,61±6,11	0,031*
With history	50	43,18±13,96	29,52±6,40	

* p<0,05, STAI-I: state-trait anxiety inventory

Table 3. Postoperative Satisfaction Scale Scores (QoR40).

	n	Mean±SD
Age (years)		
≤50	57	169,53±15,84
≥ 51	44	169,23±16,14
Type of Anesthesia		
General Anesthesia	58	171,86±17,97
Spinal Anesthesia	43	166,07±11,98
Marital Status		
Married	88	168,92±15,80
Single/Widower	13	172,62±16,80
Educational Status		
Illiterate	23	167,30±21,53
Primary school	64	169,67±14,67
High school and higher	14	171,57±10,08
Number Of Children		
No Children	9	168,08±18,82
1 to 3 children	60	171,67±17,99
4 and more children	32	172,78±18,70
History of Operation		
No history	51	166,45±16,57
With history	50	172,40±14,73

Discussion

After evaluation of the socio-demographic characteristics of the patients in this study, it was found that patients’ mean age was 49,71±8,68 years, 64 patients [63,4%] were elementary school graduates, 88 patients [87,1%] were married, 92 [91,1%] patients had children and 91 patients [90,1%] were housewives. Given these findings, we can say that the sample included patients of childbearing age, literate and married with children. Patients were evaluated and prepared during preoperative visits. Many studies have measured levels of anxiety during visits [4,5,6]. Arellano et al. for the aim of determining the right timing of the visit measured patients’ anxiety one week, a day before and just before the operation and they could not find any significant difference between them [7]. Lichtor et al. and Badner et al. measured the level of anxiety in the afternoon the day before the operation and just before the operation; while Lichtor et al. found a 70 % correlation between them, Badner et al. found a 73% correlation [8,9]. In our study, we measured the level of anxiety one day before the surgery.

Norris and Baird was reported 60% anxiety in 352 patients of 500 gynecologic patients [10]. Domar et al. reported that the mean anxiety score according to the STAI scale was 45 in 523 patients, 57% of whom were gynecologic [11]. In our study, we found the mean STAI-I score of 43,50 that was is in line with levels of anxiety in the previous studies.

There are conflicting results in the literature about the relationship between age and preoperative anxiety levels. Previous studies have reported lower preoperative levels of anxiety in older patients [12,13]. Shevde and Panagopoulos reported that the level of anxiety in elderly patients was lower [13]. Ramsay reported that the anxiety rates were 61% in the 13-21 age group, 84% in the 22-41 group, 80% in the 42-60 group, 57% in the 62-82 group, and they concluded that high

anxiety levels in middle age was due to too much responsibility to their own families [14]. Norris and Baird reported that anxiety rates of patients younger than 30 years old were higher but not statistically significant [10]. Many studies have reported that age does not affect anxiety levels [4,11,15]. In the study by Jennings and Muhlenkamp, age effect could not be shown [16]. In our study, it was found that anxiety scores were higher in the group of patients younger than 50 years old [45,93] compared to the group older than 50 years old [40,36].

In many studies, levels of anxiety in women were higher than in men [11,17]. Fom an epidemiological point of view, the fact that depression and anxiety disorders are more common in females supports these findings. According to Badner et al., this difference was due to the higher anxiety associated with separation from their families in women [9], but Shevde and Panagopoulos and Domar et al. have shown that women could express their anxiety more easily [11,13]. Only the female gender took part in our study, and the difference between women was observed.

Although some studies have reported that the level of anxiety increased with the increasing level of education in some studies, other studies have reported that education status did not affect the degree of anxiety in other studies [11,12]. Caumo et al. found that preoperative levels of anxiety were higher in people with more than 12 years of education [18]. In our study, although the highest mean STAI score was in the elementary school graduates, there was no statistically significant difference between levels of education.

It is generally accepted that the level of anxiety of patients is higher in tumor surgery operations or operations with organ loss [19]. Norris and Baird reported that the rate of anxiety in gynecology patients was higher [10]. In some studies, it was reported that the type of operation did not affect the levels of anxiety [4,11]. Patients who would undergo hysterectomy operations with organ loss were included in our study.

Shevde and Panagopoulos reported that the causes of anxiety related to anesthesia were 45% inadequate knowledge of the anesthetist, 43% lack of experience of the anesthetist, 37% inability to wake up after surgery and 34% postoperative pain [13]. While Chew et al. reported the most common causes of anxiety as pain [39,4%] and inability to wake up after surgery [18,9%]; in another study it was reported that the most common causes of anxiety were waking up during surgery [51,8%], inability to wake up after surgery [43,3%] and postoperative pain [38%] [5,20].

In many studies, it was reported that the most common cause of anxiety was inability to wake up after surgery. In our study, the most common cause of anxiety were inability to wake up after surgery [51,5%], postoperative pain [31,7%] and postoperative nausea-vomiting [25,7%].

Some studies have shown that recovery was faster in patients with low preoperative anxiety [3]. Faster recovery can be considered as a factor of increasing patient satisfaction. In our study, while single/widow group had the highest anxiety levels, it was the third group in postoperative satisfaction. While the Spinal Anesthesia group had the second common in preoperative anxiety, the same group had the lowest mean satisfaction score. ASA-I groups’ preoperative anxiety level

was the third highest, the satisfaction score was measured high again. While the general anesthesia group had the lowest anxiety score, the satisfaction score was measured as high. In our study, no relationship was established between preoperative anxiety levels and postoperative satisfaction levels.

It was reported that in adult patients, high preoperative anxiety significantly increased postoperative pain, the need for analgesic and sedative drugs. A study of 10811 patients by Myles et al. reported that there was a relationship between mild or severe pain and low patient satisfaction levels [21]. Dexter et al. reported that pain was related to low patient satisfaction levels [22]. In our study no significant result was reported in this direction.

Considering that the patients could not express their feelings near their accompanying people in the Anesthesiology outpatient clinic, patients were visited in their clinics just one day before the operation. During this visit, it was observed that the patients were relaxed after the dual conversation. It was stated by the patients during the postoperative visit that this preliminary interview with the patient created a feeling of familiarity with the operating room and a comfortable sleep at night, reducing fear of the operating room.

Previous studies have shown that patients had different levels of anxiety. Our study was planned according to this point of the previous studies. Other studies evaluated patients without gender distinction and found that anxiety was more common in woman than in man. We wanted to research anxiety only in women. Again, other studies have evaluated all types of operations. In our study, we used only hysterectomy operations with organ loss, which were most commonly predicted to increase anxiety. In this study, it was observed that being older, having given birth before, being single, and increased anxiety in patients who underwent spinal anesthesia. In addition, it was found that there was no significant change in anxiety level according to education level, number of children, occupation, and history of surgery.

Limitations

As all authors, we believe that, with a wider range and larger patient population, including different genders, different types of operations and levels of anxiety measurement at different times, more meaningful, reliable and beneficial results could be achieved.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

The authors declare no conflict of interest.

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